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Healthcare Information Technology

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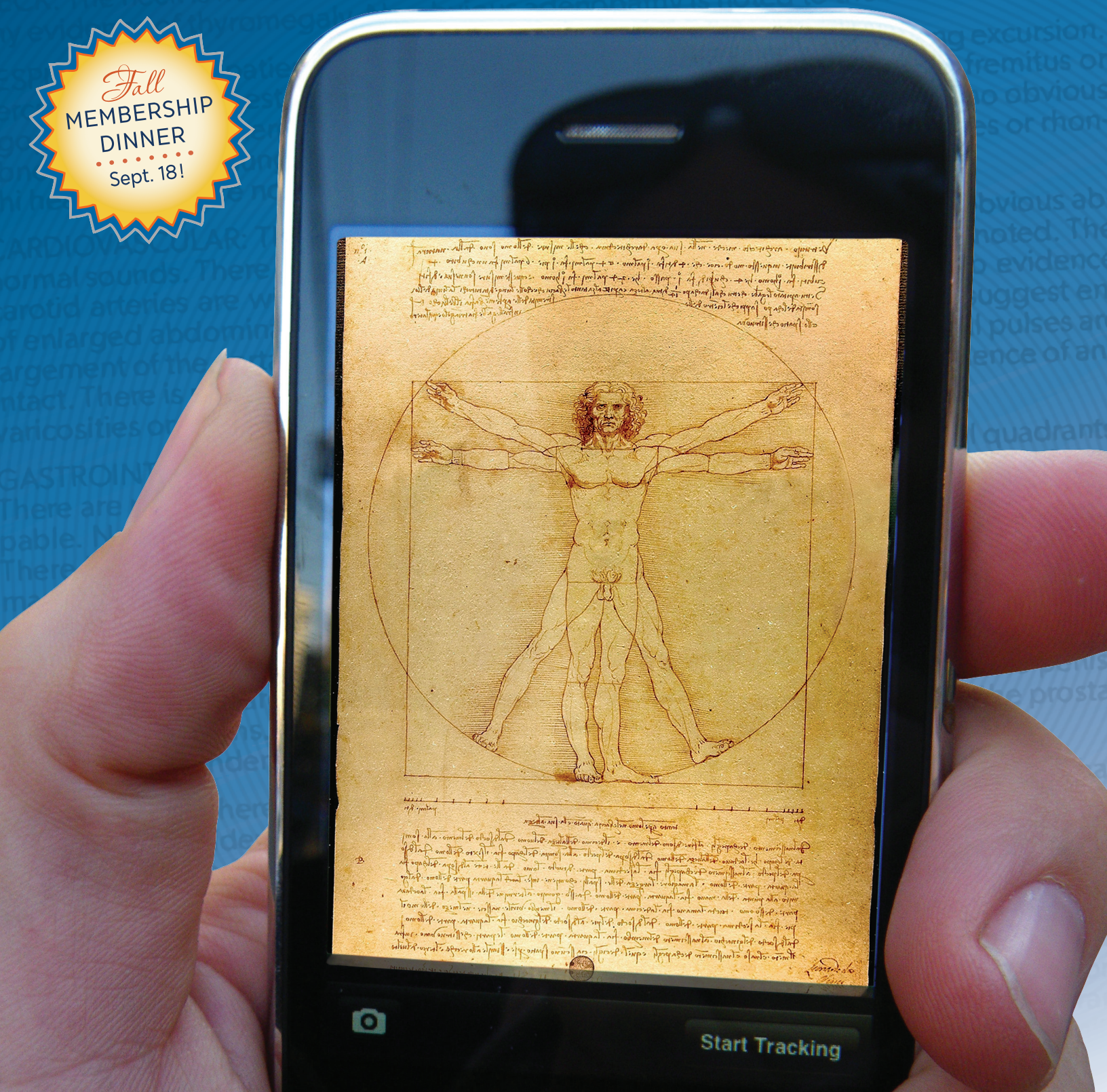

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The magazine of the Marin Medical Society

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The Stars Were Shining

Steve Osborn

One of the earliest recording stars was the great Italian tenor Enrico Caruso, who began his prolific recorded output in 1902 with a memorable version of the aria "E lucevan le stelle" (The stars were shining) from the opera *Tosca.* "Forever my dream of love has vanished," sings Caruso in Italian, taking on the role of the condemned prisoner Mario Cavaradossi. "I die in desperation, and I have never before loved life so much!"

Caruso's voice was captured for possible eternity by a spinning shellac disk called a record. The sound of the recording is scratchy and incomplete, but the voice is incredibly powerful, conveying all the torment in Cavaradossi's mind as he awaits his execution. You can hear the recording for free on YouTube, or for a price in one of the many audio formats (vinyl disk, tape, CD, MP3) that evolved from the shellac record.

This issue of *Marin Medicine* addresses another type of record, one that began on paper but has now migrated to the computer and the cloud. Rather than capturing mere sound, this record attempts to encapsulate an entire human being, measuring the person's physical characteristics, disease processes and life trajectory in the hopes of promoting the person's health or curing what ails them.

The record, of course, is the medical chart, now rapidly evolving into the electronic medical record (EMR) or health record (EHR), depending on which acronym you prefer. As Dr. Carl Spitzer notes in his excellent overview of healthcare information technology, the electronic record allows doctors to capture vast quantities of clinical data, which can then be analyzed "to ferret out the treatments that are most effective, clinically and economically, and move away from those that are least effective."

Capturing all that data won't be easy. During their patient encounters, doctors are busy enough as it is, and many are leery of adding electronic records to the mix. "I can attest that current EHR systems are so poorly designed that most emergency physicians I know loathe using them," writes Dr. Jason Ruben. In his view, the solution is to hire medical scribes who input the doctor's comments into the electronic record during patient care. Doctors who use scribes, he notes, "get to take care of patients instead of having to sit in front of their computers."

Dr. Brian Keeffe, a veteran user of smartphone technology, notes that electronic records are becoming more mobile, making desktop computers less necessary. Nonetheless, he cautions that "an obvious and major limitation of mobile devices is that they can distract from the doctor-patient relationship." To minimize the distraction, he leaves his smartphone on silent when examining patients.

Other articles in this issue examine the practicalities of selecting an EMR/EHR vendor and communicating with colleagues via doctor-to-doctor smartphone apps. In addition, our "Practical Concerns" department investigates a related issue: How well are you protected from liability in case of a data breach? For some, "cyber liability coverage" may be the answer.

Technology of a different kind is highlighted in our "Local Frontiers" article by Dr. Deepak Lamba of the Buck Institute. He describes how his lab is developing stem cell-derived retinal cells that may someday be implanted in retinas to restore vision in patients with AMD and other degenerative disorders. The procedure is still years away, but the results to date have been impressive.

In our other departments, Dr. Georgianna Farren offers an update on Marin Community Clinics, including their recent implementation of electronic records in all their facilities. Dr. Lori Selleck reviews *The Santa Rosa Reader,* an anthology of writings about our northern neighbor's esteemed family medicine residency. Finally, Dr. Jeffrey Harris brings us full circle by writing about the musical endeavors of several local physicians. Just like Caruso, many have made recordings of their efforts—but using digital technology rather than shellac.

Given the challenges of implementing electronic records and related technology, medicine still seems to be a long way from making an all-encompassing recording of a person's health with the same ease as a studio engineer putting a microphone in front of a tenor and asking him to sing. At the moment, it's hard to imagine an entire person fitting into a smartphone, available for replay or analysis at any time. By the same token, however, few people living before 1902 could have imagined that a tenor would sing "I die in desperation" onto a shellac disk and thereby live forever. ◇

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Mr. Osborn edits Marin Medicine.

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The Near Future of Healthcare Information Technology

Carl Spitzer, MD

Many would argue that prognosticating is a fool's game. Most things that happen are beyond our control or anticipation, so why bother? While this lack of control may be true for many endeavors with indeterminate time horizons, we can anticipate the near future—say the next three to five years—in healthcare information technology. In turn, our anticipation can help us prepare to meet that future. By looking to what's just over the next hill, we can invest our precious time and money wisely, and continue to focus our attention where it's most needed: on taking care of patients.

What follows are some of the big trends emerging in healthcare information technology. The list is by no means exhaustive, but it does represent a few key areas that I believe will see considerable movement in the next few years.

Analytics

With federal stimulus money driving adoption of electronic medical records (EMRs) at an unprecedented pace, vast quantities of patients' clinical data are being captured electronically. But what of it? All that effort learning new ways of documenting, not to mention the money spent—surely it's not all about making doctors' notoriously difficult-to-read notes more legible, right? Right. All that data locked up in EMRs has tremendous potential.

The clinical data in EMRs represent our collective wisdom and experience in treating patients, over long periods of time. Analyzing that data allows us to ferret out the treatments that are most effective, clinically and economically, and move away from those that are least effective. The tools that crunch these vast quantities of data fall under the heading of "analytics." Depending on where the analytic engine is focused, we can determine best practices for given conditions over large segments of the population, or narrow the lens to provide data about our particular patients.

Once those data are crunched, the resultant knowledge needs to be presented in a usable form. Arguably, presenting the information at the point of care—that is, at the moment we're making a decision about how we're going to treat a patient—offers the greatest opportunity to impact our practice positively. In the next few years, look for tools that integrate clinical decision support into our EMRs.

Once we've made a diagnosis of pneumonia or congestive heart failure, to take just two examples, our EMR will guide us (silently, gently, and with minimal intrusion, I hope) to prescribe the most clinically- and cost-effective treatment for our patient, taking into account their demographics, coexisting conditions, other medications, allergies, and insurance formulary. And just slightly further down the road, an individual's specific genome will be incorporated into their EMR, so as our knowledge of the interplay between genetics and therapeutics matures, that too will be used to guide treatment.

Health Information Exchanges

Obviously, if our patients' healthcare data remain locked in our office EMR, we won't be able to contribute to the population-based knowledge that analytics provides, nor to provide our colleagues with the data they need to treat our shared patients. In order to unlock the full potential of that data, it needs to be shared. Such sharing occurs through the mechanism of a health information exchange (HIE).

Think of an HIE as the network of dendrites and synapses that tie the axons of our EMRs together. HIEs can be organized at multiple levels: within networks of providers as might be found within an Accountable Care Organization, or across larger regional (and presumably more loosely affiliated) networks of providers. HIEs might even be organized hierarchically, with a local or

Dr. Spitzer is an emergency physician and chief medical informatics officer at Marin General Hospital.

"private" HIE tying into larger "public" HIEs to share epidemiologic, syndromic and population-based research data.

HIEs provide tools for controlling access to patient data depending on patient or provider preference as well as privacy regulations. The correct information is routed to where it needs to go, and kept away from unauthorized or prying eyes. De-identified patient data can be shared with agencies that provide disease surveillance, or that do larger population-based studies of treatments. Thus, HIEs can provide for data ubiquity as well as access control.

Mobility

Chances are good that you're carrying a smartphone in your pocket. These tiny technological powerhouses were the stuff of science fiction just a few decades ago. And, I'll argue, they are one of the keys to the near-term technological future of healthcare. Smartphones provide anytime/anywhere access to our now ubiquitously accessible patient data, make us universally accessible (where's the off button on this thing?), and provide more computational power in the palm of our hands than would fit in a building 30 years ago.

Smartphones make pagers obsolete with access to HIPAA-compliant text messages and voicemail, and they provide real-time access to high-resolution radiology images. Patients interact with apps that monitor their progress in managing chronic diseases and provide us early alerts when things are heading south (see "Telemedicine" and "Body Area Networks" below). In the near future, look for vendors to be releasing full-featured mobile versions of their EMRs, thus untethering the practice of medicine from the office forever.

Cloud Computing

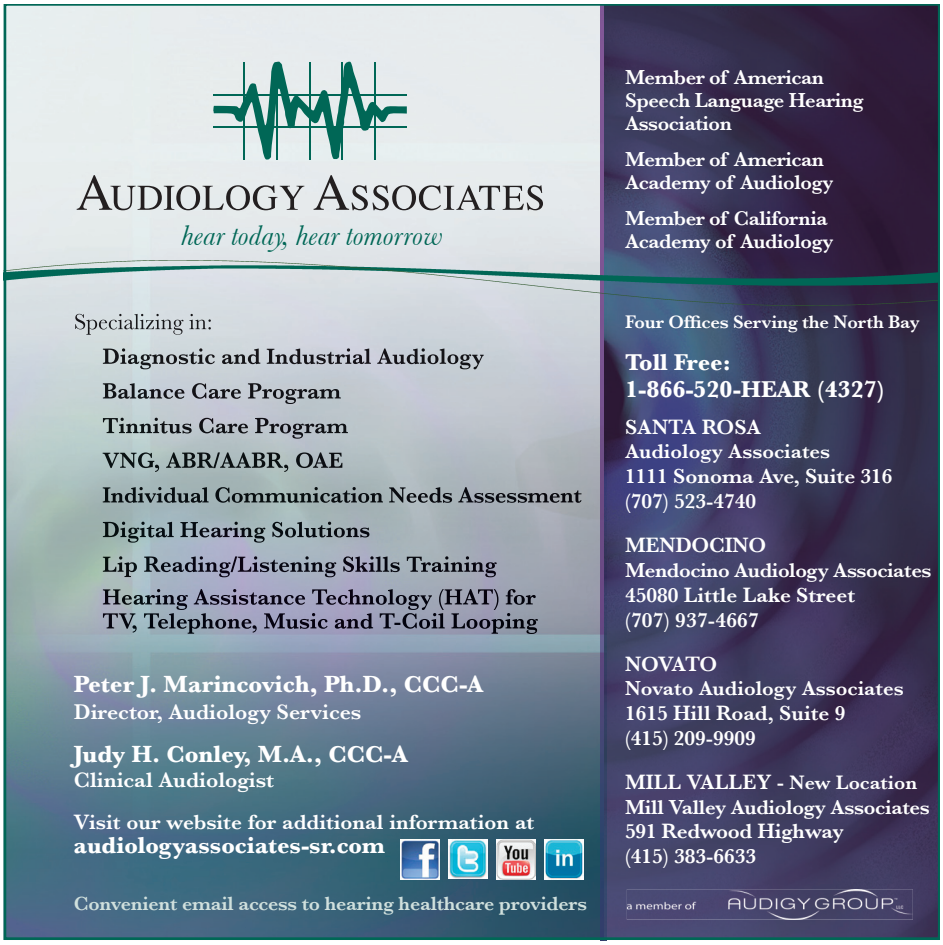
We hear much talk of "the cloud" these days. But what exactly does it signify? Essentially, cloud computing is nothing more than computing power that is moved away from our desktop computers to distant data centers to which we are connected through a network, typically the Internet. These data centers provide a level of abstraction to clinical computing that frees us from having to think about maintaining our own servers and computing infrastructure, and particularly from having to worry about the security implications of that infrastructure.

Hardly a day goes by where I don't read of another significant security breach that results in thousands of patients' Protected Health Information being released to the general public in violation of HIPAA. Where the conventional wisdom to date has been that we don't want our patients' private data residing in anonymous "server farms" for fear of just such a breach, many in the field are coming to realize that the personnel, expertise and infrastructure required to secure our patients' data presents such a large onus that it is actually cost-effective and more secure to offload these tasks to specialists who can provide these services—in the cloud. Look for more of these cloud-based hosting services in the near future of health information technology.

Body Area Networks

Last May the FCC approved allocation of radio spectrum dedicated to wireless medical monitoring devices. This development dovetails with the trend toward embedding low-cost, high-sensitivity sensors in just about everything. Many smartphones, for example, already include multiple sensors, such as accelerometers, GPS receivers and cameras.

When sensors are implanted in or attached to people, the resulting "body area networks" will transmit multiple streams of data simultaneously, including EKG, EEG, vital signs, blood glucose, other blood chemistries, and fall detectors. Many other sensors and data types are doubtless just around the corner. Body area networks will spring up in healthcare facilities, of course, but will also be present in patients' homes. This deluge of home sensor information will travel via the Internet and will require systems to store, index,



analyze and abstract all that data. Look for developments in cloud infrastructure to act as an intermediary between clinicians and this next wave of patient information.

Telemedicine

Telemedicine is a term that encompasses email, text, voice and video interactions with healthcare providers. It's being promulgated as a solution for rural areas, where access to specialty care is restricted. It's also being proposed as one way to address the growing shortage of primary care providers.

My prediction is that the next few years will see a growth of telemedicine services not just for rural populations, but also for urban and suburban patients who will come to value the convenience of a doctor's visit without having to leave home. Coupled with ubiquitous sensors and body area networks, the need to visit the office will diminish. With new reimbursement models for provision of remote services, offering telemedicine appointments can reduce office overhead, increase patient satisfaction and offer a way for physicians in competitive markets to differentiate themselves.

Patient-centric Records

With health records moving from the silos of office-based paper records into a cloud-based virtual world, our patients will expect to have access to that stream. We'll see greater adoption of personal health records (PHRs), where patients can view lab and radiology reports, problem and medication lists, and even visit notes (if their providers allow it). Portals that provide access to these PHRs will allow patients to request prescription refills and schedule office or telemedicine visits.

Look to some form of patient-centric record becoming the true longitudinal health record—that is, a record of a patient's medical history over long stretches of time and space. Where these records actually live and who controls "ownership" of them are among the issues that need to be worked out, but there is no doubt that we will soon see increasing autonomy and individual control of PHRs.

Usability

The federal HITECH Act providing incentives for adopting EMRs stipulates that end users hit targets for "meaningful use" (MU) of these tools. Qualifying for funds requires that we meet specific MU functionality measures in a number of clearly delineated areas. Some of these areas are mandatory, but others are selected from a menu. For the last few years, vendors have been scrambling to provide the MU target features in their EMRs. Further complicating matters, Meaningful Use Stage 2 will soon go into effect, requiring additional functionality. Needless to say, some of this functionality has been built with usability of the features given short shrift.

Usability is a commodity that's hard to define—we know when a particular tool is usable when our consciousness of interacting with it seems to disappear. The tool just does what it's supposed to do, and you don't need elaborate training or a manual to work it. Similarly, we know when something has poor usability: it crashes frequently, requires us to memorize complex steps to get our work done, or makes us adapt to the tool, rather than vice versa. "Death by a thousand clicks," as one of my colleagues refers to it—we know it all too well.

My most profound hope for the future of health information technology is what I'm going to conclude with as a prediction: that usability will become the key differentiating feature that stratifies the marketplace and crowns the eventual winners. Vendors who can build the tools that seem to disappear in our hands and allow us to take care of patients seamlessly will garner loyal followers by the tens of thousands. EMR makers: Are you up to the challenge? I'm predicting that you are. Don't let us down. ◇

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Medical Scribes to the Rescue

Jason Ruben, MD

Electronic health records are supposed to revolutionize healthcare. Why now the physician backlash? As a practicing emergency physician I can attest that current EHR systems are so poorly designed that most emergency physicians I know loathe using them.

In the current geopolitical atmosphere, EHR software vendors feel compelled to rush their products to market, regardless of how poorly designed they might be. With healthcare reform and EHR Federal Mandate deadlines looming in the near future, these vendors would be crazy not to.

Will leading EHR systems like Allscripts, Cerner or Epic really revolutionize the healthcare industry? I doubt it. If the deep pockets of Google Health failed, what's next?

The HITECH Act, the EHR Federal Mandate and the Federal Stimulus Package are all designed to expedite adoption of EHRs. Unfortunately, many hospital executives are pressured to purchase EHR systems that "fit" into their existing IT platform regardless of physician usability. As a consequence, a 15–30% drop in physician productivity after EHR implementation has been well documented.[1] Furthermore, one study suggests physicians are ordering more tests because of EHR implementation.[2]

To offset this drop in productivity, many emergency departments now use medical scribes. Scribes work alongside physicians, nurse practitioners and physician assistants to provide real-time charting and a variety of other clerical tasks. Scribes are trained in medical terminology and documentation, and they are experts in their department's specific documentation system.

The purpose of scribes is to document at the physician's direction during treatments so that the doctor can focus on patient care. Some doctors have commented that their shifts with scribes are more rewarding because they get to take care of patients instead of having to sit in front of their computers. Many physicians without scribes complete charts at the end of their shift, or even days later—delays that can lead to inaccuracies.

The Joint Commission has already acknowledged the value and service of scribes and has published guidelines on their utilization.[3] To people who make and service expensive EHR systems, the existence of a scribe may look like competition and a threat to their business interests. This couldn't be farther from the truth.

EHR companies should harness the value of tech-savvy scribes who grew up in the Internet age. Once fully trained, expert scribes can assist physicians on how best to use an EHR to full capacity. EHR companies should invest in training scribes to become "experts" on their systems. The companies could even write modules to help scribes manage and introduce the "bells and whistles" of the system to the team. Ultimately, scribes could be the conduit that enables EHRs to start living up to their potential.

It will take more than the perfect EHR system and the use of scribes to rescue our healthcare system, but I'm optimistic nonetheless. As Dr. Atul Gawande observed in his 2011 commencement address at Harvard Medical School, "Where people in medicine combine their talents and efforts to design organized service to patients, extraordinary change can result."[4] ◇

Dr. Ruben, an emergency physician at Marin General Hospital, directs the Scribe Program for CEP America.

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Mobile Applications in Medicine

Brian Keeffe, MD

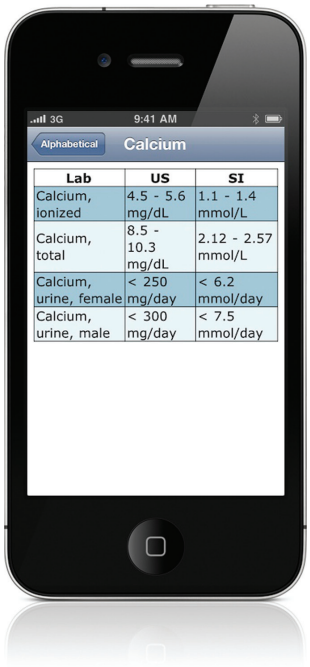
Today we are on the cusp of a revolution. In the very near future, doctors will find that mobile technology, including mobile apps and wireless sensors for monitoring our patients, will transform how we practice medicine.

The cell phone was invented in 1973. For the first 34 years of its existence, it served doctors mostly as a means of being able to answer pages without having to pull over their cars to find a phone booth. The invention of the smartphone in the late 1990s improved the functionality of cell phones. Doctors were now able to store notes and access limited medical information while in the office or hospital. In 2007, however, everything changed with the introduction of the iPhone, which had significant capabilities. Five years later, medical innovation with smartphones is starting to show exponential growth.

When I began practicing medicine in the late 1990s, the first mobile device I used was the Palm Pilot. Many of my residency colleagues and I created and shared medical notes on these devices. Later, Epocrates became available on Palm Pilots and proved invaluable in medication prescribing.

I have used an iPhone daily for medical applications ever since its inception. The applications I use most frequently include a mobile version of the Allscripts electronic medical record; Epocrates for pharmacy help; Doximity for locating other physicians' addresses and phone numbers; Qx Calculate for quick medical calculations; and Syntranet for charge capture of hospitalized patients. I also use the iPhone's camera and movie functions to send anonymous images to colleagues for curbside consults.

Dr. Keeffe, a veteran user of mobile devices and applications, is a Larkspur cardiologist.



I am not embarrassed to Google medical questions that may come up over the course of a patient visit. I do, however, continue to use a desktop computer for the bulk of my EMR viewing and documentation, as the mobile apps have not yet developed the full functionality of the desktop versions. Although tablets such as the iPad are becoming more popular, their EMRs still don't have full functionality, so I'm sticking with the iPhone-desktop combination for now.

Using a smartphone in my practice does make me more efficient and reduces the time needed to find information that aids in patient care. The smartphone is also a remarkably efficient way to communicate with other doctors. I religiously gather cell phone numbers of any doctor I can in our community. Calling or texting a doctor (must be HIPAA compliant) on their mobile device can save me valuable minutes relative to trying to reach them at the office.

I use social networks sparingly, but some are handy. Sermo and Doximity, for example, allow doctors to share cases with each other and even transmit pictures or movies to get second opinions.

Much more is possible in the world of mobile devices. There are many health-related applications that our patients can use, although few do as of yet. These include applications for monitoring blood pressure, diet, nutrition and sleep, among other functions. On the physician and hospital side, there are mobile telemedicine applications for emergency rooms and ICUs; mobile imaging apps for reading x-rays, CTs and MRIs; and mobile applications for inpatient cardiac telemetry and fetal monitoring.

The FCC recently announced that wireless monitoring devices will be allowed to transmit data by spectrum bands previously reserved for use by the aerospace industry. This new capability will eventually allow physicians to monitor patients anytime, from anywhere—and the number of applications

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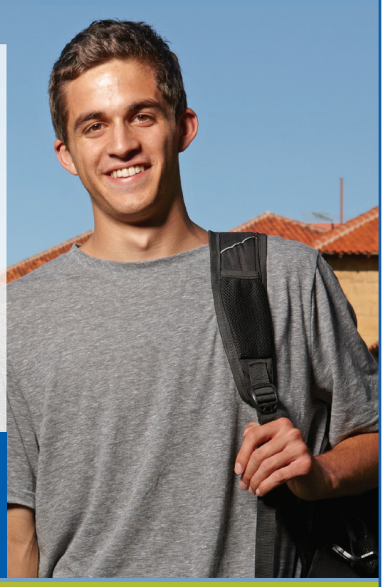
—Diego Canales, Sonoma Academy Class of 2010



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for this purpose will continue to grow.

I can envision a future where much of our patients' health information can be stored in mobile software. All types of data—including blood pressure, weight and heart rate, blood glucose, detailed exercise data, diet and caloric expenditure, oxygen saturation and sleep information, heart rhythm assessment, laboratory data and medication adherence—will be acquired and assessed on a mobile device. Furthermore, EMR vendors will continue to develop mobile versions of their software, making desktop or laptop computers less and less required. The frequency of face-to-face visits with patients will go down as the ability to view patient data on mobile devices increases. Information technology, however, will never be able to replace the power of seeing a patient in person, talking to them, and performing a physical examination.

An obvious and major limitation of mobile devices is that they can distract from the doctor-patient relationship. For physicians, our mobile devices serve not only as a source of medical information, but also as our personal and professional communication devices. Phone calls, text messages and emails can be distracting and difficult to ignore. I personally leave my smartphone on silent when I am in the exam room with a patient and only take it out to check medical information. I always let my patient know why I am using the smartphone. I do not answer calls or respond to text messages or emails while I am with a patient.

Moving forward into the future of medical practice, I am excited about what the world of mobile devices and digital advancement will bring. I hope that patients having more access to their own health data will empower them to improve their health, and that mobile access to more data will make physicians better and more efficient providers of healthcare. ◇

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Tips for Successful Implementation of EHRs

Dawniela Hightower

Implementing an electronic health record (EHR) can be either a mildly painful process or a nearly excruciating one. The dividing line—according to Bre Jackson of the California Health Information Partnership & Services Organization—is between physicians who heed the advice of experts and make important choices in the earliest stages of their implementation and those who don't. "That is a sweeping statement," she says, "but it bears a lot of truth." As chief information officer of CalHIPSO, the country's largest regional extension center, Jackson is responsible for ensuring that over 6,000 California physicians have successful EHR installations.

Dr. Steven Vargas would likely agree with Jackson's assessment. A family physician at a small private practice in Healdsburg, Vargas describes his conversion from paper to EHR as a smooth process. That's not to say the transition didn't impact his practice or that it didn't cause a slowdown in patient volume—because it did. But the anticipation of those outcomes motivated Vargas to set a course that had his practice functioning at pre-installation volumes more quickly than most.

Vargas attributes this achievement primarily to staff preparedness and says that the single biggest secret to success was getting staff to buy in fully and early. He included his entire team in the discussion over which EHR to implement, and kept them informed of the progress every step of the way. Realizing that implementation was going to be disruptive to the daily work of his support staff, Vargas knew that his best chance of success and peace of mind was to have every staff member on board and in support of the change. A successful EHR adoption can't be imposed upon staff—adoption must be made through teamwork.

When asked what drove him toward an EHR, Vargas notes, "I decided to implement once I found the right product," and adds that he waited on the sidelines of the industry for several years, observing and learning from the actions of his peers. He kept close watch on the products that were entering and leaving the market, wanting to ensure that his EHR company would be around for the long haul. "I asked for references," he recalls, "and called current customers of each product I was considering." Vargas warns that if the company can't provide current customer references, its system is likely not worth considering. He made his final selection after discussing the products with colleagues, narrowing down his lists to just a few, and downloading their online demos.

Vargas's experience is one that CalHIPSO would like to replicate in medical practices around the state, both in terms of outcome and timeline. With that goal in mind, Jackson shares the following set of EHR adoption tips when she makes presentations to physicians.

Do your homework. It's important that you enter into the vendor selection process with a clearly defined set of needs. Ask yourself which EHR functions support quality patient care while simultaneously meeting the needs of your business. Determine which features are required to meet the "meaningful use" measures or other quality reporting incentives. Then make a priority list, understanding that the entire list might not fit into the budget. Reading neutral third-party reports can help balance the sometimes partial opinions of colleagues.

Understand the costs. Adopting an EHR could require significant outlays of funds, including supplemental investments in hardware, software, training and future maintenance fees. A handful of products on the market have reduced the financial barrier to entry by offering low initial investments. Some of these products, however, impose a long list of additional fees for upgrades, new service modules, data protection and ongoing training. With other products, cost savings can result in loss of control over patient data. Paying close attention to contract terms is extremely impor-

Ms. Hightower is the marketing and communications manager for CalHIPSO.

tant, says Jackson. "Work with your regional extension center," she suggests. "We've spent hundreds of hours negotiating favorable vendor contract terms with EHR vendors, and we make these contracts available to any provider who enrolls with us."

Physicians are not required to sign CalHIPSO's EHR vendor contracts to take advantage of the regional extension services. Vargas, for example, joined CalHIPSO after selecting his EHR. Even though he chose a product outside CalHIPSO's contract program, he was still able to receive subsidized technical services from CalHIPSO throughout his implementation. He received these services through the Redwood Community Health Network (RCHN), one of CalHIPSO's 10 local extension centers throughout the state. RCHN contracted with a product specialist of Vargas's choice to come into his office and assist with implementation.

Have an onsite champion. An onsite champion is a staff member, not a physician, who is enthusiastic and supportive of the project and willing to take a leadership role in getting the rest of the staff on board. Physicians can spur the development of an onsite champion by mirroring Vargas's technique of involving staff in the entire selection and adoption process. "Staff involvement is critical," observes Jackson. "The practice manager plays an instrumental role in developing workflows to increase technology adoption, direct patient awareness and reduce the feeling that an EHR is disruptive. A motivated and informed practice manager will keep the wheels on the project moving positively forward."

Invest in training. It's easy for some physicians to write off additional training as an unnecessary expense, especially considering that time spent training is time spent not seeing patients. But the omission of training will cost more in the long run, both in time and money. Patient volumes will never reach capacity while staff members are trying to fumble their way through a new EHR. "A solid EHR training plan will help clinicians make the transition from paper to electronic health records," says Jackson. "Providing staff just-in-time training will reduce bottlenecks and increase morale. While training provided by the EHR vendor is important, it is unlikely to be sufficient."

Solve workflow solutions as a team. Involving the staff in all workflow changes goes back to Vargas's suggestion that a successful adoption requires teamwork. The team approach recognizes each staff member's role in delivering care. The approach demonstrates that all roles, both large and small, affect the office function, and that adopting an EHR requires a complete functional shift. While workflow outcomes will be unique to each office, the process of developing a new workflow should allow for the contribution of every player.

Plan, prepare, and expect the unexpected. One important piece of advice that Vargas offers is to have flexibility around the go-live date. This flexibility was especially critical for Vargas's practice because he opted to go live with all patients, all at once. To accomplish this feat, he assembled a practice lab with computer stations in his back office. "I would shut down my office for two hours a day, and not see any patients," he recalls. Vargas's team spent one or two days a week running real-life scenarios through the EHR practice lab. As the go-live date came near, the team didn't feel ready yet, so they returned to the practice lab to run more scenarios.

Vargas also hired temporary help to enter patient demographics. He considers this to be one of the best and least expensive investments of the project. "I didn't want to burn out my staff with hours of data entry," he says. Instead, he hired college students with strong typing skills to enter non-medical data. This low-cost solution helped keep his team fresh and motivated.

Notify your patients. Notifying patients is an often overlooked step in the EHR implementation process. Patients who aren't notified can be left wondering if their physician's level of service is declining. Jackson says that once patients know their provider is transitioning to EHRs, they are more often than not pleased and accept the temporary reduction in patient volume.

Electronic health records are tools to help physicians succeed at their mission of providing quality patient care. Implementing an EHR will prompt discussions about best practices, practice performance and management of clinical data. As a result, the EHR adoption roadmap should reflect known wins that will affect every aspect of the practice, far beyond the technology itself. A strategic approach to EHR adoption can turn those changes into opportunities for improvement, while helping physicians assuage the apprehension that always accompanies change. ◇

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New Smartphone App Helps Marin Physicians

Jill Bustamante

Members of the Marin Medical Society now have access to a member benefit sponsored by MIEC that can help them communicate more efficiently and save time and money in the process. That benefit is DocBookMD, a doctors-only smartphone app that allows physicians to:

Send HIPAA-compliant text messages and photos. Message content can include diagnosis, test results or medical history. Physicians can also add a high-resolution image of an EKG, x-ray, lab report or anything that can be photographed with a smartphone.

Assign an urgency setting to outgoing text messages. Physicians can assign each message a 5-minute, 15-minute or normal response time. If the receiver does not answer the message within 5 minutes or if the message does not get to the receiver, the sender receives a message back stating that the original message did not make it.

Enable enhanced notifications. The physician can enter a cell phone number to receive text messages or an email address to receive notifications that DocBookMD messages are waiting. The email feature sends a weekly reminder to view DocBookMD messages.

Search local county medical society directories. Physicians can look up colleagues in Marin and other North Bay counties by first or last name or by specialty. Physicians can then contact their colleagues by messaging, office phone, cell phone or email.

Search a local pharmacy directory. Physicians can search for a local pharmacy alphabetically or find a pharmacy by zip code. Users can also create a "favorites" list of physicians or pharmacies.

DocBookMD, which began in 2010, is offered through county and state medical societies to their members and is currently available in 23 states. As Texas nephrologist Dr. Ruben Velez notes, "It has made communication better and faster, particularly about patients in hospitals. I can also get a summary about discharged patients from the hospital." In addition, Dr. Velez uses the app to find contact information for referring physicians.

One of the most popular features of the app is texting, as DocBookMD offers physicians one of the only ways to text patient information securely while meeting HIPAA requirements. "A photograph is worth a thousand words," observes Texas plastic surgeon Dr. Rocco Piazza. "With DocBookMD, I can have the emergency department physicians send me all the information, with a photograph of a hand injury or a face laceration. I know right where it is, and I can tell them right away what we need to do or where we need to go, assess whether it's something I need to see right now, or if it can wait until morning."

Texting features are one reason why medical professional liability carriers sponsor the app and support its use among physicians. Carriers believe DocBookMD can improve communication and help physicians practice safe medicine.

In 2012, DocBookMD began regionalizing the app, allowing physicians to communicate across county lines. Regionalization breaks down the communication barriers between counties, allowing for real-time access to specialists. This is particularly important in rural areas where access to specialty care is limited.

DocBookMD is available for iPad, iPhone and Android devices and is offered at no charge to MMS members thanks to the generous sponsorship of MIEC. To register or for more information, visit www.docbookmd.com. ◇

Ms. Bustamante is the partnership manager for DocBookMD.

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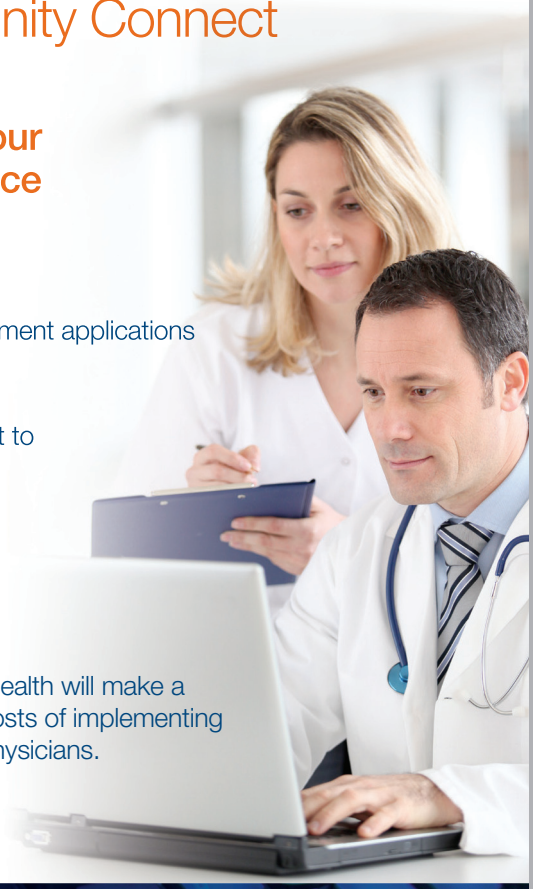

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DOXIMITY

Many apps are intended to "help doctors" with their work. Doximity, for example, was designed by the founders of Epocrates to help doctors communicate with colleagues and classmates across the entire United States in a doctors-only, HIPAA-compliant professional network. The company boasts that Linked-In cofounder Konstantin Guericke is on its board.

Doximity was launched in 2011 and is available for handheld devices and desktops, although it's primarily for mobile use. The app allows you to:

Connect with colleagues and classmates using a search by name, medical school, residency, geographic location or specialty. You can also find contact information for any U.S. physician instantly. (The app uses NPI numbers for individual physicians as its database.)

Send HIPAA-compliant text messages and faxes from anywhere. Clinical data, lab and ECG can all be included using photos taken with your phone. Phone lists of searchable hospitals nationwide are also available. Special connections can be made to share "personal profile information" with specific colleagues, such as cell phone numbers.

Participate in iRounds. Here you can view recent and popular conversations within iRounds, where topics such as curbsides, technology and health policy are discussed in a secure but transparent environment. You can become an active participant with a tap of the finger.

Earn honoraria by getting connected to clients who paid over $100 million to physicians last year for research, second opinions and medicolegal consulting.

The app continues to evolve. A "DocNews Highlights" bar, currently in beta testing, aggregates hundreds of journal RSS feeds. On the down side, pharmacy numbers used to be available, but they have been removed for unclear reasons.

For more information, visit www.doximity.com.

—Anne Cummings, MD

Dr. Cummings, a Greenbrae internist, is secretary/treasurer of MMS. Email: annemcummingsmd@mindspring.com

Stem Cell Therapeutics for Retinal Degenerations

Deepak Lamba, MBBS, PhD

The retina, like many other regions of the nervous system, is subject to various inherited and acquired degenerative conditions. One of the most common is age-related macular degeneration (AMD), a disease characterized by degeneration of the photoreceptors in the macula, the central part of the eye. AMD retinal changes are present in approximately 10% of people older than 65 and as many as one in three people older than 80. About 1.75 million people in the United States have advanced AMD with associated vision loss, and their number is expected to grow to almost 3 million by 2020. Apart from AMD, inherited retinal degenerations such as retinitis pigmentosa and Leber's congenital amaurosis have a prevalence of up to 1 in 4,000 and affect both the juvenile and young-adult populations.

In both AMD and inherited degenerations, the main cells affected are retinal photoreceptors and/or pigment epithelial cells. The inner retinal circuitry, however, is intact for many years following the loss of these cells. This persistence has led to the possibility of cell replacement as a potential therapy. Because the retina does not have an innate capacity to regenerate and replace lost cells, one potential way to help these patients is to replace the dead cells with new photoreceptors. Another possibility is to produce drugs that stop or at the least delay macular degeneration. Vascular endothelial growth factor inhibitors, for example, have already proved effective for stabilizing certain types of AMD.

Dr. Lamba is an assistant professor at the Buck Institute in Novato, where he directs the Lamba Lab.

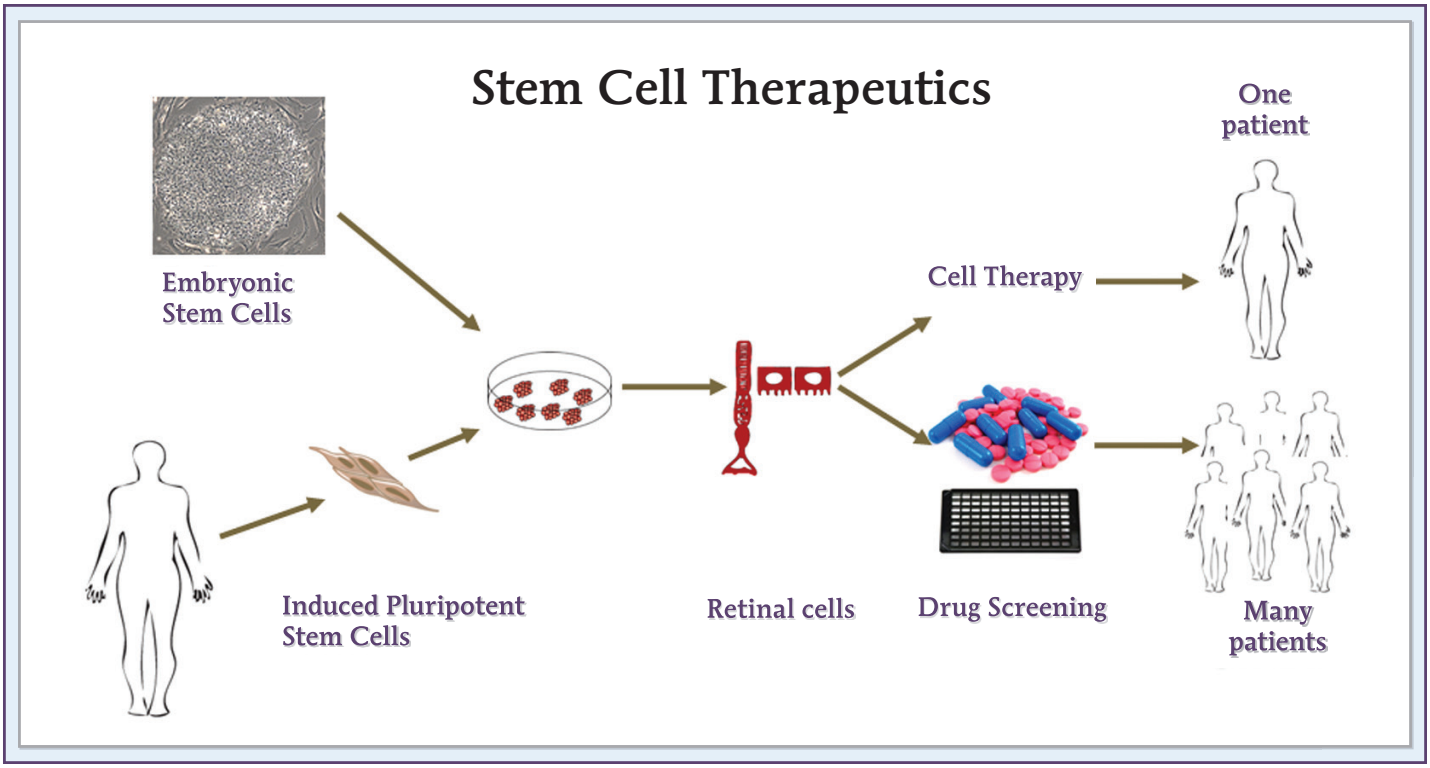
Transplantation

The isolation of human embryonic stem cells has brought about a lot of hope and optimism for their future use in tissue engineering as well as a better understanding of human developmental biology. All cells and tissues of the body can trace their origins back to embryonic stem cells. Because stem cells are able to self-renew and to differentiate into any and all the cells in the body, they can potentially be used to treat several degenerative disorders, including those of the eye. Embryonic stem cells could provide replacement cells for degenerating retinas and help restore useful vision in these cases.

Recently, a new stem cell source has been discovered: induced pluripotent stem cells, also called iPS cells. These cells are produced by converting a patient's somatic cells (e.g., skin fibroblasts, blood) to an embryonic stem cell-like cell.[1] The newly reprogrammed iPS cells have all the same properties as embryonic stem cells. They can be grown indefinitely in dishes and can form virtually any cell in the body, including retinal photoreceptors and retinal pigment epithelial cells. In addition to iPS cells, some labs are investigating adult stem cells. These cells have little capacity to regenerate, and their efficacy in making retinal cells for cell replacement purposes so far has been extremely limited.

My lab at the Buck Institute in Novato generates various retinal cells from both embryonic and induced pluripotent stem cells. Along with several other labs around the country, we have shown that it is possible to make both photoreceptors and the pigment epithelial cells in high enough number to be clinically useful in patients with various forms of retinal degeneration.[2-8] We have spent the last seven years characterizing the cells and optimizing the protocols. The stem cell-derived retinal cells express the same genes expressed by fetal retinal cells,[9] and they can differentiate into all the different types of retinal neurons, including ganglion cells, amacrine cells, bipolar cells, and both rod and cone photoreceptors. The cells have minimal contamination of other cell types, and they show no tumor-forming potential in animal transplants.

Will stem cell-derived retinal cells actually work for cell replacement in patients? We tested the ability of both embryonic and iPS-derived retinal cells to integrate into normal mouse and rat retinas, and found they have the ability to move from the subretinal



Different options for using embryonic or induced pluripotent stem cells for retinal degenerations.

space (the site of their transplantation) and integrate with normal retinal cells in both mice and rats. We also transplanted these stem cell-derived cells into several mouse models of human retinal degeneration, and again, the cells integrated into the degenerating retinas. The integrated photoreceptors make synaptic contacts with the host bipolar cells, the second-order neurons in the retina. These encouraging morphological results led us to test by electroretinogram (ERG) recordings whether the transplanted retinal cells were able to restore any light response to the animals, and we found that indeed we could detect an ERG signal (with appropriate latency and polarity of a b-wave) in the transplanted blind mice.[4]

Despite this encouraging data, there are still many regulatory and scientific challenges that could take several years to resolve. On the regulatory side, prior to any clinical trial, we need to show the safety of the cells to be transplanted. They cannot contain any contaminants that could potentially cause harm to patients—one of the most serious concerns being a teratoma. This regulation requires long-term survival studies.

On the scientific side, the biggest challenge seems to be integration. Currently, the percentage of cells able to integrate and make connections is low (approximately 0.05–0.2%). Since hundreds of thousands of photoreceptors will probably be needed to restore useful vision, the challenge for the cell replacement strategy will be to generate sufficient numbers of cells and identify methods to improve integration efficiency.

In contrast to retinal cells, the strategy for pigment epithelial transplantation is a lot easier because of the fewer number of cells required and simpler transplantation surgery. In 2010, Advanced Cell Technology received regulatory approval to use embryonic stem cell-derived pigment epithelial cells in a phase I/II clinical trial involving patients with Stargardt disease. This cohort was subsequently expanded to include patients with the dry form of AMD. Several eye institutes and hospitals throughout the United States and England are involved in the trial, which is ongoing.

Drug Discovery

The use of iPS cells allows for new approaches to studies of disease mechanisms, which could also allow us to find new drugs to slow disease progress. Patient-specific iPS cell lines have already been created from patients with Parkinson's disease, Huntington's disease and sickle cell anemia.

My lab is in the process of generating similar cells from patients with various forms of retinal degeneration. In vitro differentiated retinal cells from these patient lines can then be used for drug screening and discovery. Novel drugs or drugs already approved by the FDA could be screened to identify ones that will slow down or even stop the degenerative process. In addition, the cells can be used for toxicity screens that will provide safety data and help reduce the drug's chance of failure in clinical trials.

Certain oral supplements currently used for retinitis pigmentosa and AMD are still not widely accepted in ophthalmology practices because the mechanisms of action are unknown. Using patient-derived cells will allow us to better understand the effects of these drugs. Patient-derived photoreceptors or pigment epithelial cells are the optimal model for novel drug discovery and pharmacological study.

Stem cell technology has opened up new avenues of therapeutic options for degenerative diseases, including those involving the retina. The research over the next several years should provide us with new treatment options for patients suffering from AMD as well as other degenerative disorders. ◇

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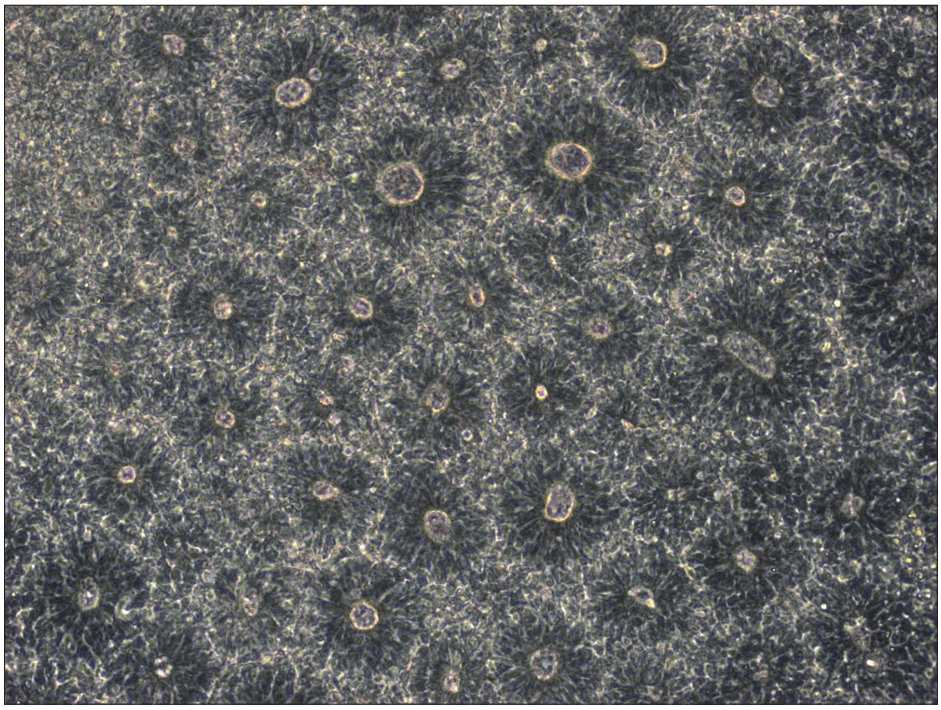
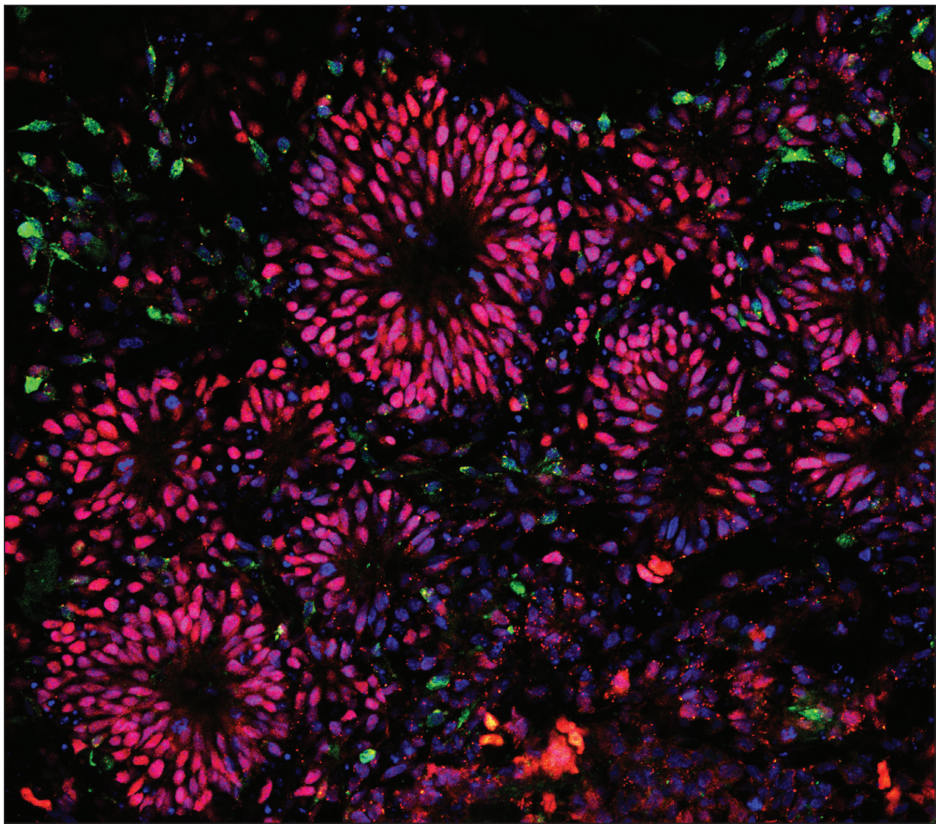


Human embryonic stem cell-derived retinal progenitors in a typical rosette pattern.



Human embryonic stem cell-derived retinal rosettes stained for stem cell (red) and neuronal (green) markers.

Cyber Liability Coverage

Claudia Dobbs

Almost a decade has passed since the first HIPAA Privacy and Security Rules went into effect. Ever since, physicians and their staff have labored to act in accordance with these regulations by developing and implementing policies and procedures that shield protected health information (PHI); by advising patients how their PHI may be used and their right to limit access to the data; by identifying business associates, safeguarding the transmission of electronic PHI, and much more.

This past decade has also witnessed massive expansion of technology that can be used to transmit and store PHI and promote collegial communication. These technologies include electronic health records, smartphones, email, communication portals, laptops, iPads, eICUs, telemedicine, social networks, and data-storing "clouds," to name just a few. The capability for physicians to communicate and collaborate electronically via HIPAA-compliant smartphone platforms such as DocBookMD is yet another example of innovative healthcare technology (see the article on DocBookMD elsewhere in this issue).

Although federal and state regulators encouraged the development and use of healthcare technology, they again raised the bar of responsibility for physicians by implementing the HITECH Act breach notification regulations, which went into effect in 2010. The HITECH Act reinforces the HIPAA rules, outlines a data breach notification process, and threatens significant fines for noncompliance.

In spite of doctors' heightened awareness of both federal and state confidentiality rules and regulations, a 2011 Ponemon Institute study illustrates that healthcare data breaches are on the rise and that more work needs to be done to protect PHI, computing devices and patients harmed by data breaches.[1] Among the study findings:

- 96% of all healthcare providers who participated in the study had at least one data breach in the last two years.
- 49% of the respondents cited lost or stolen computing devices.
- 81% of the healthcare organizations in the study reported using mobile devices to collect, store and/or transmit some form of PHI.
- 49% of the participants admitted that their organizations do nothing to protect mobile devices.
- Only 29% of respondents agreed that prevention of unauthorized access to patient data and loss or theft of such data is a priority in their organization.
- 90% of the surveyed healthcare organizations indicated that the breaches caused harm to patients; however, 65% did not offer protection services to the affected patients.

These statistics are disturbing, but perhaps even more disturbing are the reported costs to participants in the study. The average economic impact of a data breach was $2.2 million. While this data reflects the costs of larger organizations rather than the typical medical group, it is an indication of the expenses associated with recovering from a data breach. In addition to these expenses, 81% of the respondents believed their organization suffered from time and productivity diminishment after a breach, followed by brand or reputation diminishment (78%) and loss of patient goodwill (75%). The average lifetime value of one lost patient rose from $107,580 in 2010 to $113,400 in 2011.

Does your malpractice insurance carrier protect you against privacy breaches with cyber liability coverage? Several types of coverage are available. MIEC, for example, provides a "DataGuard" endorsement for each physician's policy.

The DataGuard protection covers most types of expenses policyholders may have to pay in the event of a privacy breach, with a limit of $50,000. This limit is a basic level of protection. DataGuard coverage includes:

Network security and privacy insurance. Coverage for both online and offline information, virus attacks, denial of service, first-party HIPAA violation coverage and Red Flag Regulations. This includes coverage for fines

Ms. Dobbs is a loss prevention manager at MIEC.

and penalties from privacy regulatory actions.

Patient notification costs and credit monitoring insurance. Coverage for necessary legal, PR, advertising, IT and forensic costs and postage expenses incurred by you to notify third parties of a breach of information. Will also pay for one year of credit monitoring for all affected parties.

Data recovery costs insurance. Coverage for reasonable and necessary sums required to recover and/or replace data that is compromised, damaged, lost, erased or corrupted.

Given the expenses involved in responding to a breach, MIEC recommends considering higher limits.

MIEC also provides an electronic platform that enables policyholders to understand and deal with these new and evolving exposures. Policyholders can explore these tools by logging into www.miec.com and clicking on the DataGuard link. The tools and resources on the website include compliance materials, implementation checklists, training programs and step-by-step procedures to reduce risk, such as information on the proper destruction of protected health information.

If you haven't done so already, you need to implement the changes necessary to be in compliance with the HITECH Act. You should also revisit the HIPAA Privacy and Security Rules to ensure you are in compliance. (Information on complying with these rules can be found on www.miec.com.) If you do experience (or believe you have experienced) a data breach, you should call your professional liability carrier right away. ◇

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Reference

1. Ponemon Institute, "Second annual benchmark study on patient privacy and data security," idexpertscorp.com (2011).

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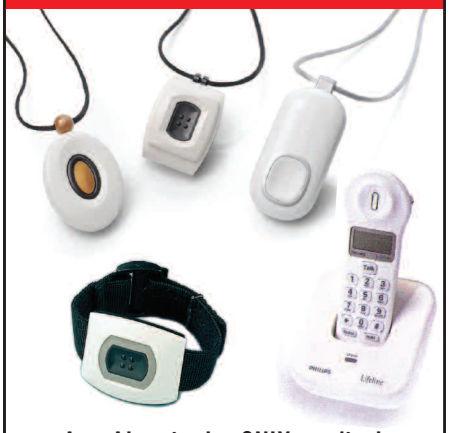

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Practice, Play, and Have Fun!

Jeffrey Harris, MD

Quite a few physicians play music off the job. When *Marin Medicine* asked me to write about my musical avocation, I surveyed several other physicians I've played with to see how music fit into our lives. What follows is a compilation of their answers and mine.

CD cover for Purvis and the Stray Dogs.

What medical specialties do we have?

Physician musicians have many different specialties; there don't seem to be specific fields of medicine that are correlated with an interest in music. Among other jobs, I practice urgent care at Kaiser San Rafael. Dr. Ray Brindley is a hospitalist at Marin General. Dr. Ann DeLaney is a plastic surgeon, also at Kaiser San Rafael. Dr. Ward Flad works in the ER at Healdsburg Hospital. Other physician musicians I know are psychiatrists, cardiologists, head and neck surgeons, and internists.

How did we get started in music?

Ray started playing guitar at age 8 in Alabama. Ward borrowed his brother's guitar at age 10 and taught himself how to play. Ann started playing trumpet in junior high. She added guitar and voice in high school because she wanted to be a folk singer (didn't we all?).

There was also parental influence. Ray's grandfather was a big-band leader, and Ray's father played in the band. My mother is a violinist, and my father played harmonica.

To quote The Grateful Dead, music is often a long, strange trip. I started recorder in kindergarten, moved to clarinet in grade school since I didn't have enough air to play sax, and taught myself bass and guitar in high school. During my internship at the old Public Health Service Hospital in the Presidio, I started voice, performance, songwriting, piano and pedal-steel lessons at Family Light Music School in Sausalito (escapism?). We had an all-physicians band that played at Family Light concerts. When my wife (Mary Anderson) and I moved to Nashville, I studied classical voice and saxophone at the Blair School of Music and played bluegrass instruments with Mary at bluegrass jams. I picked up drums about seven years ago when my kids stopped taking lessons, because drums looked interesting and I liked the teacher. It turns out that rhythm (drums and bass) and voice are my strong suits. A bit of a late discovery . . .

What types of music do we play?

We all play some form of music from our formative years, including blues, rock, country and folk. Ward plays finger-style versions of (mostly) 60s tunes, with an emphasis on the Beatles. Ray plays guitar with Firewheel, an Electric Americana band (how Woodstock would have sounded if it had been in Tennessee). Ann sings with an a cappella group and plays the zils (finger cymbals) with a belly dancing group. She also performs on the doumbek (a Middle Eastern drum) and the guitar. She plays jazz, standards, folk and Middle Eastern music.

For me, another long, strange trip. I played surf music in high school, blues in college, and rock during medical school. I played folk rock in Juneau and bluegrass in Anchorage while in the Public Health Service and afterwards. Mary and I played rock and country when we lived in Nashville. Now I sing and play various instruments in The Egrets (rock), Left on Lonely (country and bluegrass), Purvis and the Stray Dogs (rockabilly), and Chameleon (jazz). I should mention that all these bands are the same people playing different kinds of music. They include several local professional musicians who have played with stars such as Huey Lewis, Maria Muldaur, Fleetwood Mac, Michael Jackson, the Jazz Crusaders and

Dr. Harris, an accomplished amateur musician, practices urgent care at Kaiser San Rafael.

Willie Nelson, among others.

I sang with SingersMarin for many years as well. Mary is a member of The Egrets, Left on Lonely and SingersMarin, so we spend time playing and singing together.

Where do we play?

Ray, Mary and I have played in bands and vocal classes organized by the Crossroads music school in Mill Valley. Mary and I have also played with bluegrass bands at the Freight and Salvage Coffee House in Berkeley and Bluegrass at the Beach in Oregon.

Many physician musicians—including Ann and I and Drs. Mike Lennon, Alan Eshleman and Bob Fried—have played at the Kaiser Physicians' Wellness picnic for the last 10 years. Ray's band plays at Peri's, George's, 19 Broadway, Rancho Nicasio and other Marin venues. We've also played Crossroads concerts at various local spots, including Dr. Irina deFischer's birthday party. SingersMarin performs at the Civic Center, schools and senior facilities around Marin County and has sung at Carnegie Hall. The acoustics there are amazing, adding to the experience.

Several doctors host jam sessions on an irregular basis. These are a lot of fun and let us hang out with people who have common interests.

Do we make recordings?

In the 1980s, Mary and I had an analog recording studio in Nashville where we produced cassettes of bluegrass, country and rock. We now have a digital recording studio and spend a fair amount of time working on recordings. My drum teacher is also my engineering teacher and chief engineer.

Left on Lonely—including (left to right) Lou Ponticas, Norma Merchant, Mary Anderson and Dr. Harris—playing in the old Sweetwater Saloon in Mill Valley.

We have produced and engineered CDs on our own label, Special Projects Records. ("Special projects" are what corporate people get assigned to when management is trying to get them to fade into the sunset.) To date, we have made CDs for Purvis and the Stray Dogs, Sound Medicine, The Egrets, Jazzi and The Permian Rangers. We are working on CDs for Chameleon, Tiffany, Left On Lonely, and the Tamalpais Valley Ramblers, along with more CDs for The Egrets and Purvis and the Stray Dogs.

How does music interact with our medical careers?

We all play music as a change of pace, and as Ward puts it, to use the other (right) half of our brains. He notes that developing right-brain skills helps with patient interactions. Music uses different skills and abilities than most of medicine, so it provides a break and positive sensory feedback. It has also improved my ability to hear subtle heart murmurs and breath sounds.

Playing is fun and relaxing, although practicing can be frustrating. Ray and I have found that talking about musical interests improves the mood at work. Ann points out (and I agree) that playing complex rhythms activates the brain. Some of us use music as an alternative identity. All told, music provides balance to our lives.

What would we recommend to colleagues interested in learning a musical instrument?

Ann and I advise finding classes or a good teacher and just getting started. Keep your expectations realistic and practice a lot. I have trouble with this, but Ray practices every day before work. Ward plays for a couple of hours each morning, to create a good mind-set for the rest of the day. He also finds music especially reenergizing after a long shift in the ER, to redirect his thinking back to a more relaxed, less serious state of mind.

Ray and I agree that ear training helps a lot, both with pitch and rhythm. Reading music helps but is not mandatory. You should at least learn to read tablature (note fingerings), if not actual notation (note pitches). Band classes are a lot of fun and provide a supportive environment. Jamming with friends is also fun and motivational. For jamming, it's important to have a good sense of rhythm and to play well with others.

Practice, play, and have fun! ◇

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Marin Community Clinics

Georgianna Farren, MD

Note: *Each issue of Marin Medicine includes a self-reported update from one local hospital or clinic, on a rotating basis.*

Marin Community Clinic's double-wide trailer on the grounds of Marin General Hospital.

In last year's update in these pages, I wrote that "change is the only constant for Marin Community Clinics as we adapt to community needs and a profession in flux. With an enthusiastic staff and tremendous community support, our organization is expanding services to meet the growing need for affordable healthcare." That statement is as true now as it was then. Change continues to be the only constant at our clinics.

Marin Community Clinics—a Federally Qualified Health Center with medical clinics in Greenbrae, Novato and San Rafael and dental clinics in Novato and San Rafael—is celebrating its 40th year of serving as a vital part of Marin County's healthcare safety net. Most of our patients are low income, and many of them receive public insurance such as Medi-Cal.

Dr. Farren, president-elect of MMS, is chief medical officer for Marin Community Clinics.

Over the past year, we have undertaken several initiatives to improve care and access to care at our clinics. We recently finished implementing NextGen electronic health records (EHRs) in all our medical clinics; our dental clinics have used the Dentrix system since we began providing dental care in 2008. The process was varied, with some clinicians starting EHRs with only a couple of patients per day, and others taking the "big bang" approach of selecting a target date to begin using EHRs with all patients. We have now begun to refine data collection and implementation of registries for disease management, and we expect to have many opportunities to improve care as we begin to use the newly available patient data.

Joining a national movement, we are also creating a Patient Centered Medical Home. In the PCMH model, the focus is on patient access, self-management, chronic disease management and team care. Patients are now being assigned to one primary care physician with a specific medical assistant. The PCMH relies on proactive staff members who engage with the patient to maintain or improve health. The timing is ideal, as we now have access to data and technology that allows for patients to be reminded of recommended preventive care, along with follow-up care for chronic problems.

This past year we had our most comprehensive reporting on quality measures ever. Partnership HealthPlan brought its Medi-Cal managed care system to Marin County in July 2011 and has an incentive program with targets for various healthcare outcomes and prescribing practices. As a result, we have had our first potential financial incentives for achieving quality targets. Medicare's EHR Meaningful Use measures also require reporting on and meeting numerous quality criteria. Both the Partnership and Medicare programs clearly signal changes in the way medical services in primary care settings will be reimbursed in the future. The focus on quality measures is a welcome change.

We have also just completed our first full year of obstetric care in San Rafael. Together with Marin General Hospital and Prima Medical Group,

we offer coverage of deliveries at the hospital. Patients may have a hospital delivery with either a physician or a certified nurse midwife. Our obstetric services team includes a licensed clinical social worker, Comprehensive Perinatal Services Program counselors, certified nurse midwives, obstetricians, and dental providers. We also offer the Sweet Success program for women with pre-existing or gestational diabetes. We will launch a smaller obstetric program in our Novato Clinic this fall.

For over 20 years, our Greenbrae Clinic has been located in a double-wide trailer on the grounds of Marin General Hospital—and the trailer is becoming less attractive by the day. We are actively looking for a site and the necessary funds to relocate the clinic in close proximity to the hospital. We not only want a better environment for staff and patients, but would also like to vacate the trailer to accommodate the hospital's plans to use the space where the clinic is located.

The Supreme Court's recent decision to uphold the Affordable Care Act should have a positive impact on access to healthcare for many of our safety net patients. Many currently uninsured Marin County residents will be able to get health insurance when the new insurance exchanges open and the requirements for Medi-Cal change from 100% to 133% of the Federal Poverty Level. The number of people eligible for Medi-Cal could increase by as much as 30%.

This increase in insured patients will allow for improved care and prevention for some of the more vulnerable residents of Marin County. Since the Affordable Care Act was passed in 2010, we have been taking steps to prepare for the changes it will bring, including newly insured patients seeking care. The relocation of the Greenbrae Clinic will be a crucial step in enabling us to accommodate larger numbers of patients. ◇

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IN MEMORIAM

Dr. Chas Hoffman, Past MMS President

Longtime Marin internist Charles "Chas" Hoffman, MD, passed away in August at the age of 87. Born in Ohio, Hoffman settled in Marin County in the early 1950s after medical school, residency and more than a decade in the U.S. Navy. He established a solo private practice and also worked part-time at San Quentin and the old Ross Hospital, where he helped manage the ICU. He served as president of MMS from 1975 to 1976, and he was a founding member of the Medical Insurance Exchange of California, now known as MIEC.

After retiring in 1992, Hoffman continued to visit former patients at nursing homes. He also swam daily and played tennis and bridge. He and his wife, Nancy, were seasoned travelers, but they mostly enjoyed spending time with their children and grandchildren. ■

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The Heart and Soul of Family Medicine

Lori Selleck, MD

The Santa Rosa Reader: A Personal Anthology from the Family Medicine Residency, by Rick Flinders, MD, 95 pages, Sonoma County Medical Association, $9.95.

When asked to read and review *The Santa Rosa Reader,* I agreed, happy to see that at only 95 pages it would be an "easy read." I was not expecting to enjoy it as much as I did. The book presents selections from the writings of family physician Dr. Rick Flinders over the past four decades, generally tracing his experience as faculty at the Santa Rosa Family Medicine Residency Program.

While training as an internist, I never really understood family physicians. I was amazed at the breadth of their knowledge, as they cared for patients essentially from cradle to grave. Family medicine made some sense to me during the days when we also worked in the hospital dealing with critically ill patients; but now that adult medicine has, for the most part, been divided into outpatient and inpatient specialties, I have been curious as to how our different training has prepared us for outpatient primary care medicine.

Family practice (now known as family medicine) became its own three-year specialty with board status in 1969. At that time Community Hospital, which had been a general practice residency located in the foothills above Santa Rosa, became one of the nation's first family practice residencies. Flinders writes about this "Quiet Revolution," attributing the birth of family practice to the ideals of the sixties:

> The generation of the sixties regarded the medical profession (indeed, most professions) with the same suspicion it projected onto the rest of the establishment. . . . At the same time, what better profession than medicine to fulfill the call to human service articulated by so many of the disenchanted? And what better specialty than family practice to bring to medicine a restoration of the values perceived missing from the profession? A personal physician, a caring physician, one who listens to you, who knows the rest of your family, who will "be there for you" when it counts and will take care of most of your problems without referring you off to some specialist? It was to become this kind of personal physician, who wouldn't hide behind technical jargon or a white coat, that many who had dropped out of school in the sixties found themselves re-enrolling in the seventies."

One of the most touching chapters in the book is "Chimes of Freedom," a transcript of Flinders' commencement speech to the 1999 Santa Rosa residency graduates. His speech is patterned after the lyrics of the Bob Dylan song of the same name, which captured the cultural and socioeconomic struggles of the sixties. In the same year Dylan wrote the song (1964), Congress passed legislation extending Social Security benefits for the elderly (Medicare), passed civil rights legislation and declared a national War on Poverty. "These were times when government was still trusted," writes Flinders, "when medicine was still personal . . . it was a time of social conscience."

By 1999, however, times had changed. During the 1990s, HMOs "became the most visible symbol of the for-profit corporate tidal wave that has swept up over American medicine," observes Flinders, adding that "we can do better" and concluding with these stirring words:

> Because where there is care there is light. And the light at the end of the tunnel is you. You're our best hope, because you came to medical school at a time when a chorus of lesser voices told you not to do it. You were told you would go into debt, struggle with red tape, hold lower status and less autonomy. But you rose to the challenge and kept your promise, and you have already inspired us all. . . . I want you to remember the person you were when you first chose to become physicians, because the voice of that person is worth listening to for the rest of your careers. In that person's choice was something more enduring than naive impressionability or youthful idealism. I believe it's at the core of what makes you doctors: It is that you care.

Dr. Selleck, an internist at Kaiser Novato, serves on the MMS board of directors.

In "Residency at the Crossroads" (2006), Flinders describes the residency's effect on the healthcare economics of Sonoma County. Of the 264 graduates of the program over the previous 25 years, 147 were still practicing in the county, including 82 in private practice, 29 at local community clinics and Public Health, 25 at Kaiser facilities, and 11 at Sutter. Many more practiced in neighboring counties. This "river of residents" has been and continues to be an important producer of family physicians in the North Bay region.

We now find ourselves on the cusp of meaningful healthcare reform, with an increasing number of people being able to get health insurance, and with more focus on wellness and prevention. A cornerstone of this process will be to have an adequate supply of primary care doctors, which at this point we do not have. With fewer general internists going into primary care for adults, the role of the family physician will be of paramount importance. As Flinders states in "Family Medicine as Counter-Culture": "If you look at the salaries of other specialties, the choice to enter family medicine today is essentially one of social conscience, and in these times an act of political courage. . . . If revolution in healthcare is what is needed to change medicine for the better, then let it begin here, in family medicine."

The Santa Rosa Reader paints a wonderful picture of the heart and soul of family medicine, giving insight into what it means to practice as a family physician. If we are smart, our country will do what it takes to encourage other motivated, smart people to go into this field, to help move us in the right direction toward good health for all. ◇

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Note: *All proceeds from sales of* The Santa Rosa Reader *benefit the Santa Rosa Family Medicine Residency Program. To order by phone with a credit card, call the Sonoma County Medical Association at 707-525-4375. To order online, visit www.scma.org. An eBook edition is available at Amazon and other online retailers.*

NEW MEMBERS

Note: *MMS is pleased to welcome more than 100 physicians in The Permanente Medical Group of Marin to membership in MMS and CMA. Under the leadership of Dr. Gary Mizono, physician in chief, Dr. Lori Selleck and Dr. Irina deFischer, TPMG–Marin will sponsor membership for any physician within their group who wishes to join MMS/CMA. Thank you TPMG–Marin for your commitment to organized medicine!*

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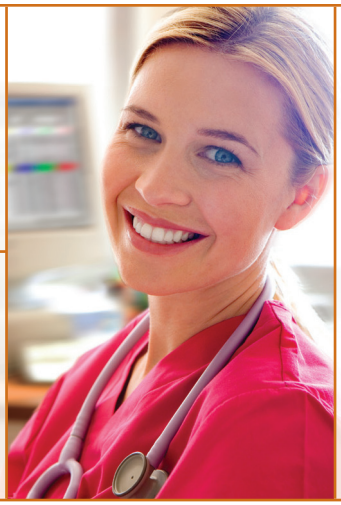

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